

## SAFETY DATA SHEET

Version 6.1

Revision Date 07/16/2018

Print Date 10/11/2019

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1. PRODUCT AND COMPANY IDENTIFICATION

## 1.1 Product identifiers

Product name : ACRYLIC ACID-D4, 98 ATOM % D, CONTAINS &amp;

Product Number : 456349

Brand : Aldrich

CAS-No. : 285138-82-1

## 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

## 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 Spruce Street  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

## 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887

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2. HAZARDS IDENTIFICATION

## 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 3), H226

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 3), H311

Skin corrosion (Category 1), H314

Serious eye damage (Category 1), H318

Skin sensitisation (Category 1), H317

Germ cell mutagenicity (Category 2), H341

Carcinogenicity (Category 2), H351

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H226

Flammable liquid and vapour.

H301 + H311 + H331

Toxic if swallowed, in contact with skin or if inhaled.

H314

Causes severe skin burns and eye damage.

H317

May cause an allergic skin reaction.

H341

Suspected of causing genetic defects.

H351

Suspected of causing cancer.

H400

Very toxic to aquatic life.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233

Keep container tightly closed.

P240

Ground/bond container and receiving equipment.

P241

Use explosion-proof electrical/ ventilating/ lighting equipment.

P242

Use only non-sparking tools.

P243

Take precautionary measures against static discharge.

P261

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P271

Use only outdoors or in a well-ventilated area.

P272

Contaminated work clothing should not be allowed out of the workplace.

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P310 + P330

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.

P301 + P330 + P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305 + P351 + P338 + P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

P333 + P313

If skin irritation or rash occurs: Get medical advice/ attention.

P362

Take off contaminated clothing and wash before reuse.

P370 + P378

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P391

Collect spillage.

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

P403 + P235

Store in a well-ventilated place. Keep cool.

P405

Store locked up.

P501

Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Rapidly absorbed through skin.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Formula : C<sub>3</sub>D<sub>4</sub>O<sub>2</sub>  
Molecular weight : 76.01 g/mol  
CAS-No. : 285138-82-1

#### Hazardous components

Component	Classification	Concentration
<b>Acrylic acid-d4</b>		
	Flam. Liq. 3; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; H226, H301 + H311 + H331, H314, H400	<= 100 %
<b>Hydroquinone</b>		
	Acute Tox. 4; Eye Dam. 1; Skin Sens. 1; Muta. 2; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H317, H318, H341, H351, H410	>= 1 - < 5 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

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### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

##### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

##### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

## 5.2 Special hazards arising from the substance or mixture

Carbon oxides

## 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## 5.4 Further information

Use water spray to cool unopened containers.

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations.

Vapours can accumulate in low areas.

For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store under inert gas. hygroscopic

hygroscopic

Storage class (TRGS 510): 3: Flammable liquids

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Acrylic acid-d4	285138-82-1	TWA	2.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	2.000000 ppm 6.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		

		PEL	2 ppm 5.9 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		
Hydroquinone	123-31-9	TWA	1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Dermal Sensitization Eye irritation Eye damage Confirmed animal carcinogen with unknown relevance to humans		
		TWA	2 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		C	2 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		PEL	2 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

#### Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Hydroquinone	123-31-9	Methemoglobin	1.5% Hb	In blood	ACGIH - Biological Exposure Indices (BEI)
	Remarks	During or at the end of the shift			

## 8.2 Exposure controls

### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

#### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 30 min

Material tested: Dermatrill® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

a) Appearance	Form: liquid Colour: clear, colourless
b) Odour	Stench.
c) Odour Threshold	No data available
d) pH	1.0 - 2 at 500 g/l
e) Melting point/freezing point	Melting point/range: 13 °C (55 °F) - lit.
f) Initial boiling point and boiling range	139 °C (282 °F) - lit.
g) Flash point	46 °C (115 °F) - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 13.7 %(V) Lower explosion limit: 2 %(V)
k) Vapour pressure	5 hPa at 20 °C (68 °F) 53 hPa at 60 °C(140 °F)
l) Vapour density	2.49 - (Air = 1.0)
m) Relative density	1.108 g/cm <sup>3</sup> at 25 °C (77 °F)
n) Water solubility	completely miscible
o) Partition coefficient: n-octanol/water	log Pow: 0.46
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

**9.2 Other safety information**

Surface tension	28.1 mN/m at 30 °C (86 °F)
Relative vapour density	2.49 - (Air = 1.0)

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

Contains the following stabiliser(s):

Hydroquinone (1 %)

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong acids and strong bases, Oxygen, Peroxides, Polymerizing initiators

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 193 mg/kg (Acrylic acid-d4)

LD50 Oral - Rat - 360 mg/kg (Acrylic acid-d4)

LD50 Oral - Mouse - 830 mg/kg (Acrylic acid-d4)

LD50 Oral - Mouse - 2,400 mg/kg (Acrylic acid-d4)

LD50 Oral - Rat - 2,590 mg/kg (Acrylic acid-d4)

LD50 Oral - Rat - 1,500 mg/kg (Acrylic acid-d4)

LD50 Oral - Rat - 2,600 mg/kg (Acrylic acid-d4)

LD50 Oral - Mouse - 2,400 mg/kg (Acrylic acid-d4)

LC50 Inhalation - Rat - 4 h - 3,600 mg/m3 (Acrylic acid-d4)

LD50 Dermal - Rabbit - 640 mg/kg (Acrylic acid-d4)

LD50 Dermal - Rabbit - 990 mg/kg (Acrylic acid-d4)

LD50 Dermal - Rabbit - 295 mg/kg (Acrylic acid-d4)

LD50 Dermal - Rabbit - 750 mg/kg (Acrylic acid-d4)

LD50 Dermal - Rabbit - 280 mg/kg (Acrylic acid-d4)

LD50 Dermal - Rabbit - 294 mg/kg (Acrylic acid-d4)

LD50 Intraperitoneal - Rat - 22 mg/kg (Acrylic acid-d4)

LD50 Intraperitoneal - Mouse - 144 mg/kg (Acrylic acid-d4)

LD50 Subcutaneous - Mouse - 1,590 mg/kg (Acrylic acid-d4)

#### Skin corrosion/irritation

Skin - Rabbit (Acrylic acid-d4)

Result: Severe skin irritation - 24 h

#### Serious eye damage/eye irritation

Eyes - Rabbit (Acrylic acid-d4)

Result: Severe eye irritation

#### Respiratory or skin sensitisation

- Guinea pig (Acrylic acid-d4)

Did not cause sensitisation on laboratory animals.

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as

probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **Reproductive toxicity**

No data available

No data available

#### **Specific target organ toxicity - single exposure**

No data available

#### **Specific target organ toxicity - repeated exposure**

No data available

#### **Aspiration hazard**

No data available (Acrylic acid-d4)

#### **Additional Information**

RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting (Acrylic acid-d4)

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence (Acrylic acid-d4)

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## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 27 mg/l - 96.0 h(Acrylic acid-d4)

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 95 mg/l - 48 h(Acrylic acid-d4)

Toxicity to algae EC50 - Desmodesmus subspicatus (green algae) - 0.04 mg/l - 96 h(Acrylic acid-d4)

### **12.2 Persistence and degradability**

Biodegradability Biotic/Aerobic - Exposure time 28 d(Acrylic acid-d4)  
Result: 100 % - Readily biodegradable.

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available(Acrylic acid-d4)

### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### **12.6 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life.



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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 2218      Class: 8 (3)      Packing group: II  
Proper shipping name: Acrylic acid, stabilized      Marine pollutant: no  
Poison Inhalation Hazard: No

### IMDG

UN number: 2218      Class: 8 (3)      Packing group: II      EMS-No: F-E, S-C  
Proper shipping name: ACRYLIC ACID, STABILIZED  
Marine pollutant : yes      Marine pollutant : yes

### IATA

UN number: 2218      Class: 8 (3)      Packing group: II  
Proper shipping name: Acrylic acid, stabilized

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## 15. REGULATORY INFORMATION

### SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Hydroquinone	123-31-9	2007-03-01

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Hydroquinone	123-31-9	2007-03-01
Acrylic acid-d4	285138-82-1	2007-07-01

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Acrylic acid-d4	285138-82-1	2007-07-01
Hydroquinone	123-31-9	2007-03-01

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Acrylic acid-d4	285138-82-1	2007-07-01
Hydroquinone	123-31-9	2007-03-01

### New Jersey Right To Know Components

	CAS-No.	Revision Date
Acrylic acid-d4	285138-82-1	2007-07-01
Hydroquinone	123-31-9	2007-03-01

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### Further information

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### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956  
Version: 6.1

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